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The seven hundred and twentieth Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday, 15 May 1979 at 7 p.m. Total attendance was 21 Members and 7 guests.

Members present were: P. HOGG (*Chairman*), Miss I. P. BARCLAY-SMITH, J. P. C. BURGESS, D. R. CALDER, R. D. CHANCELLOR, R. A. N. CROUCHER, O. J. H. DAVIES, D. J. FISHER, DR. C. H. FRY, A. GIBBS, B. GRAY, D. GRIFFIN, C. F. MANN, REV. G. K. McCULLOCH, DR. J. F. MONK, J. G. PARKER, R. E. F. PEAL, DR. D. W. SNOW, P. D. W. TIMMS, C. E. WHEELER, BARON CHARLES DE WORMS.

Guests present were: Dr. B. Stonehouse (*speaker*), Miss M. Barry, Mrs. G. K. McCulloch, G. P. McCulloch, Capt. I. E. McCulloch, J. Messenger, Mrs. B. K. Snow.

Dr. B. Stonehouse spoke on Penguins and Flightlessness in Birds. He dealt first with the evolution of penguins, deducing that the earliest forms must have been small, although no fossil remains of them have yet been discovered. He explained that they evolved as temperate water birds and that now most species are to be found in the zone 40°S–60°S, seeking cold water areas and approximately the same water temperature all the year round. He showed slides, including one of the wing loadings of various groups of sea-birds. He dealt with the effect of wing loading upon the ability of a bird to fly and the nature of its flight and this gave rise to considerable discussion of particular interest, covering many sea birds.

The seven hundred and twenty first Meeting of the Club was held at the Goat Tavern, 3 Stafford Street, London W.1., on Tuesday, 10 July 1979 at 7 p.m. Total attendance was 20 members and 3 guests.

Members present were: P. HOGG (*Chairman*), W. G. HARVEY (*speaker*), MISS PHYLLIS BARCLAY-SMITH, MRS. DIANA BRADLEY, D. R. CALDER, R. D. CHANCELLOR, the EARL OF CRANBROOK, R. A. N. CROUCHER, SIR HUGH ELLIOTT, D. J. FISHER, A. GIBBS, B. GRAY, D. GRIFFIN, J. A. HANCOCK, C. F. MANN, J. G. PARKER, R. E. F. PEAL, P. S. REDMAN, K. V. THOMPSON and C. E. WHEELER.

Guests present were: Miss M. Barry, Mr. and Mrs. Christopher Scarlett.

Mr. W. G. Harvey gave an illustrated address on Ornithology and Conservation in Indonesia. He gave much information about the relationship between the species found in Indonesia and those in adjacent areas and on ornithological work carried out in Indonesia. He pointed out that there was little known about the bird populations currently in forest areas and that investigation of the remaining forests, particularly in Java, was much needed. Indonesia had about 340 endemic bird species outside New Guinea (in which there were about 470 endemic species) and the density of birds was low in the most populated areas, so he feared that a number of species must be in danger of extinction.

Variations in the external features of the Spur-winged Goose

by *A. Clark*

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The Spur-winged Goose *Plectropterus gambensis* is accepted by most authorities as a member of the tribe of perching ducks Cairinini, alongside two other African species, the Pygmy Goose *Nettapus auritus* and the Knob-billed (or Comb) Duck *Sarkidiornis melanotos*. Woolfenden (1961), on the other hand,

found many features characteristic of Shelduck (Tadornini) in its post-cranial skeleton and considered it an aberrant Shelduck. It is not as aquatic as the Shelduck and the polygamous nature of the males resembles that of the Knob-billed Duck. Reviewing the known characteristics of the two tribes, Delacour (1954/64) retains it in the Cairinini, but as a rather aberrant member. It is the largest and most wary of African waterfowl and the sole representative of its genus in the world.

The Spur-winged Goose is distributed throughout Africa from the Sahara to the Cape but is absent from the drier parts of the Cape Province, South West Africa (Namibia) and Botswana. Stark & Sclater (1906) seldom met with it south of the Orange River and today its principal stronghold in the Republic of South Africa (RSA) is in the Vaal basin where the population probably exceeds 10,000. It is not uncommon in other parts of the RSA where suitable watery habitat is available.

Stark & Sclater (1906) accepted two species *Plectropterus gambensis* and *P. niger* but considered the differences could be merely subspecific. Delacour (1954/64) treated them as two races, the Gambian Spur-winged Goose *P. g. gambensis* and the Black Spur-winged Goose *P. g. niger*, the former distributed between the Sahara and the Zambezi and the latter between the Zambezi and the Cape, but recognised many intermediates. According to Delacour *niger* has a less conspicuous knob on the head, reduced bare patches on the face and less white on the face, neck, breast and wings than *gambensis*. Clancey (1967), also accepted two races, but considered the distinctive characteristics to have developed in isolation and that the two races, now in secondary contact, were producing many intermediates. North of the Zambezi, in Malawi, Laycock (1965) recorded one of the darker form, while a specimen from Ethiopia (Abyssinia) in the British Museum, collected in 1905, although labelled *P. g. gambensis*, shows characteristics of the southern form.

Benson *et al.* (1970), McLachlan & Liversidge (1970) and Prozesky (1970) treat the species as monotypic, apparently agreeing with Smithers & Mackenzie (1973) that it is not possible to separate the species into two races. Mackworth-Praed & Grant (1962) likewise recognise no races.

In an attempt to throw some light on these differences specimens were examined at the British Museum, Tring (38 *P. g. gambensis* and 6 *P. g. niger*), Wildfowl Trust, Slimbridge (2 *P. g. gambensis* and 2 *P. g. niger*) and the Transvaal Museum (4 *P. g. gambensis* and 4 *P. g. niger*).

The size of the knob was found to be variable in both races, but in most *niger* females the knob was either absent or less pronounced. The extent of the bare area on the face, which evidently extends with age, was variable and this applied to both sexes of either race. In what appeared to be specimens of old birds the bare area covered the knob, surrounded the eye and covered part of the cheek. Nine of 31 adult *gambensis* of both sexes and 3 of 4 *niger* specimens had small wattles on the top of the head, a feature which evidently occurs throughout the range. The extent of the white feathers on the face was variable, specimens collected 70 years ago in most African countries showed its extent to vary from nothing to full face (when the white feathers extend to the chin and throat), and more recent specimens showed no difference. Even so, most specimens of *niger* showed less white on the face than

gambensis and this appeared to be true also for the underparts. Live birds from Nigeria present in the Slimbridge collection during 1978 when compared with most wild birds seen on the Witwatersrand at this time confirmed these differences.

There were 2 male specimens at the British Museum (1 Ethiopian and 1 Zambian) and 3 males at the Transvaal Museum, (2 from the Zambezi and one collected near Rustenburg, Transvaal in 1938), which had a bare patch at the top of either side of the neck (which in live birds appears red or orange). The Nigerian male in the Slimbridge collection had this distinctive feature. Most published illustrations (Delacour 1954/64, Scott 1961) show the bare red neck patch on the male of the northern form only and Marler (1973) states that it does not occur in *niger*. However, it can often be seen in male birds amongst wild flocks on the Witwatersrand and it can be seen in birds at Ndumu, Zululand (M. D. Olver, pers. comm.). Clancey (1967) found it present in southern African birds (presumably for Natal) and Smithers & Mackenzie (1973) show it as occurring in Rhodesian birds. Evidently it can be found in male birds throughout the range.

Extremes of variability in all these distinctive features were found in both northern and southern forms. Seventy years ago Horsburgh (1912), who accepted two species, found birds in the Orange Free State and the Transvaal answering to the description of the northern species *P. gambensis*, although he does not mention the bare red neck patch, and this appears to be true today.

Although there are no unsurmountable geographical barriers between the various African regions for a strong flier like the Spur-winged Goose (ringing of RSA birds has provided no evidence of regular seasonal movements but occasional flights in excess of 600 km have been recorded) it is possible that the West African birds form a fairly discrete population, and this could be true also of the Ethiopian population. Museum specimens are admittedly inadequate for a critical assessment of the variables involved due to deterioration of the plumage, the apparent inaccuracy of some sex determinations and the inability to adjust for the effect of age on some features. Nevertheless, it is clear from this survey that the level of individual variation in many populations is such that no satisfactory arrangement of the species into northern and southern forms can now be effected. The two types were in all probability segregated from one another in former times, but with the disappearance of the cause or causes of isolation, intermixing has taken place and the variable population we now encounter has resulted. In the circumstances I do not believe that the *P. gambensis* warrants treatment as a polytypic species.

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The *Bradypterus cinnamomeus-mariae* complex in Central Africa

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THE STATUS OF *Bradypterus cinnamomeus ufipae*

Since Grant & Mackworth-Praed (1941) described *Bradypterus cinnamomeus ufipae* from Mbisi, Sumbawanga, on the Ufipa Plateau in southwestern Tanzania, all workers have attributed this form to the species *B. cinnamomeus*. Grant & Mackworth-Praed considered *ufipae* to be confined to the Ufipa Plateau; they record that the type (obtained by R. E. Moreau's collector) was from an altitude of 2440 m, although in fact Mbisi Forest is at about 2250 m. White (1960) considered *ufipae* to be a poorly differentiated form, best treated as synonymous with *B. c. nyassae*. Benson *et al.* (1971) ascribe to *B. cinnamomeus* a wide distribution in northern Zambia, in both montane and non-montane areas. They attribute all Zambian material to the race *nyassae*, but point out that birds from non-montane areas of the Northern and Luapula Provinces are rather redder, implying an approach to *ufipae*. Hall & Moreau (1970) draw attention to these Central African populations (Map 179), but consider them "duller and more olive" than populations of *B. cinnamomeus* from elsewhere.

During the past few years we have studied the morphology, vocalisations and distribution of various populations of *Bradypterus* in Central Africa. We are convinced that all workers have been in error in ascribing *ufipae* to *B. cinnamomeus*, as it is clearly a form of *B. mariae* (or *B. barratti*, *sensu lato*). The *Bradypterus* which occurs in the non-montane forests of northern Zambia, mostly between 1200 and 1600 m altitude, is the species *mariae* and not *cinnamomeus*.

White (1960) appears to have confused these two species in the hand, as did Grant & Mackworth-Praed (1941) and other workers; we suspect that when he considered *ufipae* to be close to *B. cinnamomeus nyassae*, he cannot have had specimens of *nyassae* for a direct comparison.